Rethinking Ecology
EDITORIAL

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Rethinking Ecology – Challenging Current Thinking in Ecological Research

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Abstract

Rethinking Ecology is a new open access, peer-reviewed journal that aims at fostering both forward-thinking and the publication of novel ideas in all aspects of ecology, evolution and environmental science. This editorial briefly presents the rationale, unique features and the aspiration of the journal.

Keywords

Ecology, bold ideas, new ideas, new hypothesis, co-authorship, double-blind peer review.

RATIONALE. Why do we need yet another journal in ecology?

In 2013, the British Ecological Society published a list of 100 questions of fundamental importance in ecology (Sutherland et al. 2013). The questions raised align strongly with those issued during the 2015 United Nation Climate Change Conference (COP21) held in Paris. In both these works, the urgent need for new ideas and hypotheses in ecology, evolution and environmental science, and particularly those that focus on finding solutions to address critical issues such as climate change and biodiversity loss were strongly represented.

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We contend that solutions to such challenges require bold thinking and ideas that are potentially controversial. However, publishing controversial ideas and hypotheses that challenge current thinking and ecological dogma is difficult (Geman and Geman 2016), and often requires testing of an idea before it is accepted for publication in conventional peer-reviewed journals. This impediment causes long delays before a new idea is made available to the wider scientific community, as scientists are reluctant to share ideas prior to their publication for fear of being scooped.

Rethinking Ecology is an opportunity to publish novel ideas and hypotheses prior to fully testing them. Our aim is to encourage scientists to share and discuss their novel ideas with their peers without fear of losing the credit they deserve. The publishing of these ideas at an early stage also has the potential to draw attention from the scientific community, help create research networks with other interested parties, support grant proposals, and help refine the idea before testing it experimentally. The aim of *Rethinking Ecology* is therefore to be an incubator for novel ideas, and a catalyst for new thinking.

THE KORU AS A SYMBOL OF THE JOURNAL. Unfurling new ideas

We chose the koru, a spiral-shaped unfurling leaf of a fern, as the logo for *Rethinking Ecology* (Fig. 1). Koru literally means 'loop' in *te reo* Māori and is a very important symbol in Māori culture. The koru carries the symbolic message of novelty, representing "*new life, new beginning*" as well as perpetual movement (Turketo 2012). Each publication in *Rethinking Ecology* can be seen as the beginning of life for a new idea and its metaphorical unfurling as it reaches out to the scientific community. This logo also conveys a message about the origin of the journal as the species represented by the koru is the silver fern (*Cyathea dealbata* (G. Forster) Swartz, 1801), a species endemic to New Zealand.

UNIQUE FEATURES. A new way of encouraging all scientists to contribute

Promoting non-commissioned perspectives and double-blind review

Rethinking Ecology is an open access journal that aims at fostering both forward thinking and the publication of novel ideas in ecology. The term ecology in this instance should be understood in the broadest sense. Contributions from any aspect of the discipline of ecology are welcome (e.g. evolution, ecophysiology, environmental sciences, global change biology, human ecology and decision ecology).

In many journals, perspective articles are commissioned and only well-established or renowned scientists have the opportunity to express new ideas. At the core of *Rethinking Ecology* is the fact that perspective articles are not commissioned by the jour-

Rethinking Ecology
A peer-reviewed open access journal

Figure 1. The koru was chosen as the logo of the journal because of its representation of "*new life, new beginning*" in Māori culture, to illustrate the purpose of the journal and its New Zealand origin. Top: an unfurling frond of the New Zealand endemic silver fern (by Jon Radoff, via Wikimedia Commons). Bottom: The logo for *Rethinking Ecology*.

nal. We believe that novel ideas do not arise from direct invitations, are not the exclusive privilege of already renowned scientists, and may arise from scientists anywhere in the world. Our aim is to enable authors to publish their best ideas and perspectives, regardless of their seniority, their publication track record, their gender, or their country of origin. Perspective papers have traditionally been the territory of well-established scientists; this journal challenges that dominance.

To ensure every manuscript is assessed with the complete absence of bias during the peer review process, we chose to use a double-blind process where reviewers do not see the name of the authors. We believe that divulging authors' identity to reviewers is unnecessary to the peer-review process; only the content of the manuscript is of relevance. In a world with no conflict of interest (declared or undeclared) and no bias (conscious or unconscious), a fully open model where reviewers and authors are named seems like a sensible approach. But, it is known that bias and conflict of interest do exist in science (Lieff Benderly 2016). In the context of a journal that publishes new

ideas, to divulge authors names to reviewers is at best unnecessary, and at worse could interfere with a fair peer-review process.

In addition to this double-blind review process, reviewers will not be asked for a formal recommendation to publish. Reviewers are asked to comment on and score a set of specific questions (Table 1), while the editors will make their decision based on reviewers' comments and scoring. With this model, we aim at streamlining the peer-review process and shorten the time from submission to acceptance, which has remained at around 100 days for the past 36 years (Powell 2016).

For perspective papers, authors cannot be expected to increase the novelty or the feasibility of their idea. Therefore, low Novelty or Feasibility scores will lead to rejection. Low scores in Scholarship or Literacy, however, can be acted on and will therefore likely lead to a revision of the manuscript (Figure 2).

Table 1. Scoring system used to evaluate a submission

SCORE CATEGORY	CRITERIA	Acceptance cut-off
Novelty Score	How novel is the idea/hypothesis?	75%
Feasibility Score (testability / likelihood / applicability)	Does the idea/hypothesis arise from or is supported by rigorous arguments? Is the idea/hypothesis testable? Is the new term/definition useful?	50%
Scholarship Score	Comprehensive knowledge and good use of the current literature	66%
Literacy Score	English, grammar, clarity, logical flow etc.	75%

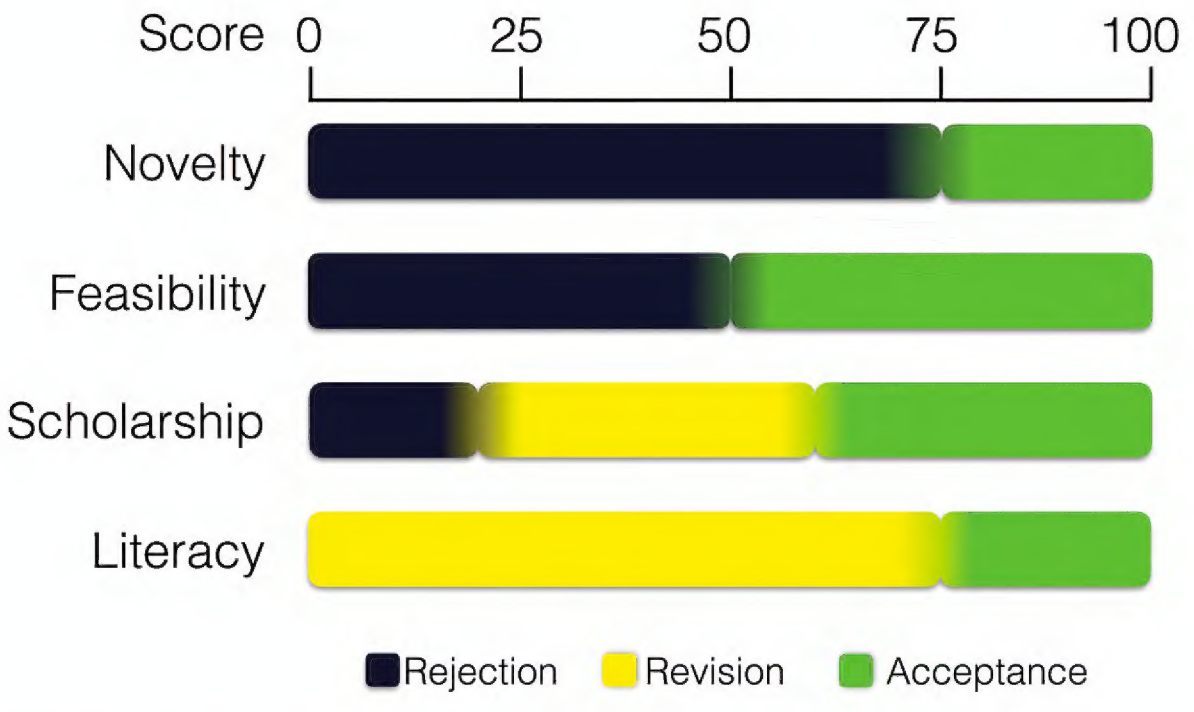

Figure 2. Decision diagram based on scoring for Novelty, Feasibility, Scholarship and Literacy (see Table 1 for full description of each category).

Implementing an author contribution index

Another singularity of *Rethinking Ecology* is the inclusion of a percentage-based Author Contribution Index (ACI) that accurately reflects the contribution of each co-author. This index is a unique feature that provides readers with a contribution metric. It is based on a single percentage contribution for each co-author and constitutes a very simple (and universal) metric. The percentage contribution of each author is agreed upon by the co-authors and provided when the manuscript is submitted.

Percentage contribution and the ACI index will be featured on every paper published in *Rethinking Ecology* to establish the true contribution of each co-author and limit 'guest authorship' (i.e. inclusion of authors who did not significantly contribute to the work), an unethical and long-time denounced but still recurrent practice in science publishing (Bennett and Taylor 2004). The number of articles focusing on the issue of co-authorship has seen a sharp increase in recent years (Figure 3). Many of these articles propose solutions to tackle this issue, including various indices or measures of author contribution (for a recent review see Abambres and Arab 2016). However, we have been unable to find any ecological journal who has implemented a quantitative measure of co-authors contribution, although some journals publish a qualitative summary of author contribution (e.g. *Ecology Letters*, *PeerJ*, *PlosOne*).

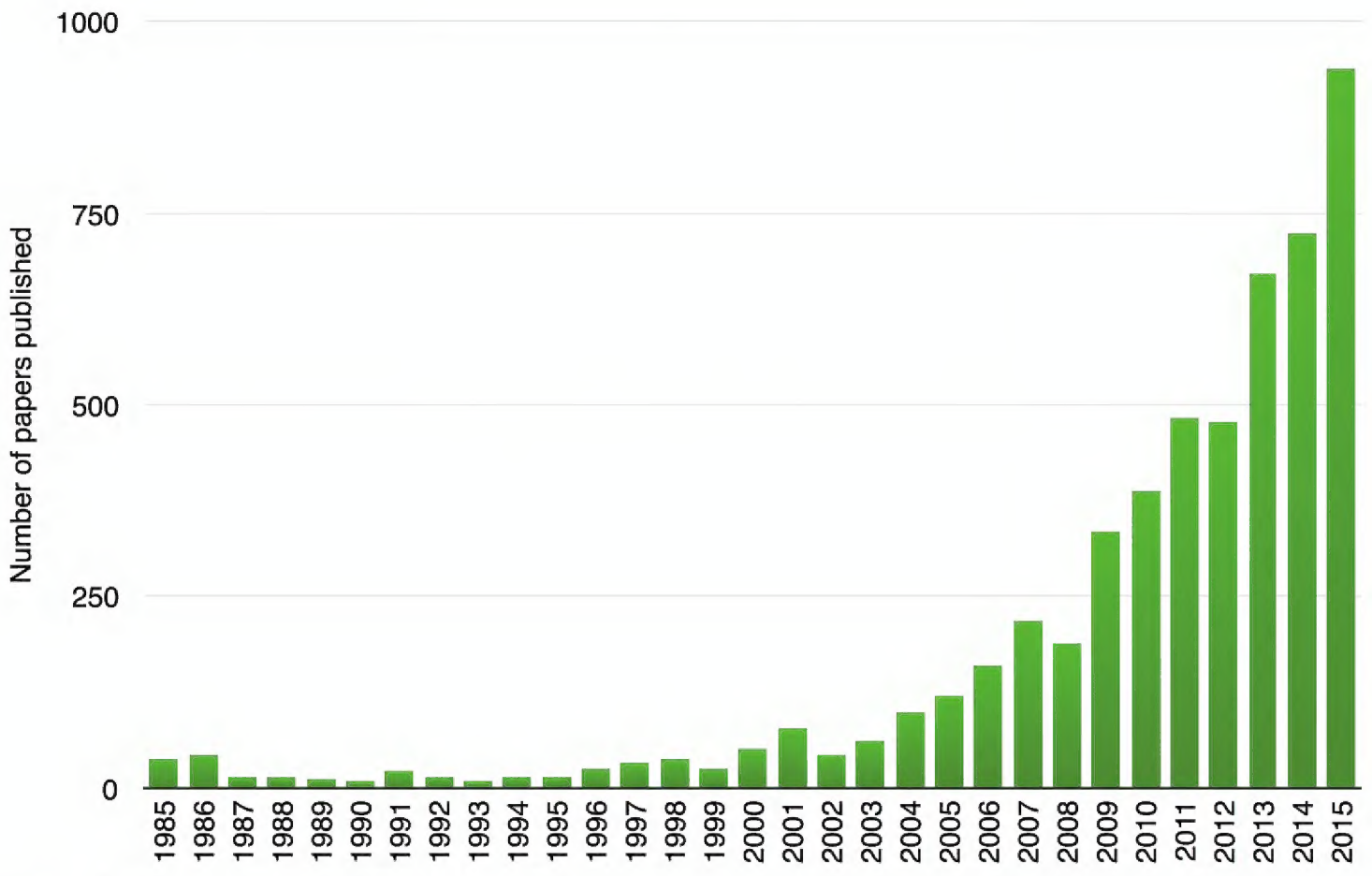

Figure 3. Recent increase in publications focusing on the issue of co-authorship in science papers, based on a search on the ISI Web of Knowledge database using the following command: TITLE: (co-author*) OR TITLE: (coauthor*).

Supporting research in developing countries

We believe that open access is essential to the global dissemination of scientific research. However, in the current publication model, the relationship between research funds and open access journals only goes in one direction. *Rethinking Ecology* proposes a more sustainable publishing model where Article Publication Charges (APC) are kept affordable, and crucially, a proportion of the APC is dedicated to supporting researchers in developing countries. Through this unique feature, *Rethinking Ecology* will directly foster and build scientific activity in countries where the scientific community may have limited access to resources for small projects, conference attendance, etc. Although this contribution may be modest (US$100 per paper), it is sufficient to kick-start pilot studies and other activities.

We aspire to lead by example and hope that this model will be adopted by many other journals, which could generate significant funds to support the wider scientific community. We have chosen to focus on the South Pacific region for *Rethinking Ecology*, acknowledging the origin of the journal and New Zealand's close cultural connections to it. The support funds generated by *Rethinking Ecology* authors will be donated to, and administrated by, an in-country panel of scientists based in Fiji. Projects supported will be summarised on the journal website to allow the scientific community to find out about the projects that the journal has been able to support.

INNOVATIVE THINKING NEEDS INNOVATIVE PUBLISHING

Rethinking Ecology will be published by Pensoft's advanced publishing platform ARPHA (Authoring, Reviewing, Publishing, Hosting and Archiving). The journal will be published in three different digital formats (PDF, XML, HTML) and will offer a number of functionalities and semantic enhancements of the published content, among which:

1. Citations in the text cross-linked with the reference lists; each citation can be visualized as a full text reference by positioning the cursor on it.
2. Figure and tables in-text citations, cross-linked with the figures/tables themselves; figures and tables are visualized in a separate bar and can be enlarged for finer detail. They can be downloaded as a full image or in CSV (tables), opened in new window, viewed in the sidebar, and others.
3. Taxa mentioned in the paper are linked to their dynamic online profiles (Pensoft Taxon Profile, http://ptp.pensoft.eu), created on the fly. PTP links the taxon name to a number of searched biodiversity resources, such as GBIF, EOL, NCBI, BHL, IPNI, Index Fungorum, ZooBank, Morphbank, Wikipedia, Wikispecies, Yahoo images, etc.
4. Data publishing via integration with data repositories (e.g., Dryad, Zenodo, GBIF IPT).

5. Publishing different kinds of multimedia files - videos, 3D pictures, audios, MicroCite images.
6. Article-level and sub-article-level usage metrics, including Altmetrics.
7. Integration with external peer-review registration or handling platforms (Publons, Peerage of Science).
8. Automated archiving in Zenodo and CLOCKSS.

CONCLUSION

We invite authors to share their novel ideas and perspectives in all aspects of ecology with the wider scientific community by submitting their manuscript to *Rethinking Ecology*. The journal aspires to provide a platform for inspirational ideas that will ultimately contribute to the sustainable management of ecological resources on planet Earth.

AUTHOR CONTRIBUTION

Designed and wrote the manuscript: SB, MCL, LW. Prepared the figures: SB, MCL.

Authors	Contribution	ACI
SB	0.40	0.12
MCL	0.30	-0.07
LW	0.30	-0.07

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